REMARKS/ARGUMENTS

The Office Action in the present case was mailed on October 26, 2005, making a response due on or before January 26, 2006. Since this response is being timely submitted, no additional fee is thought to be due at this time. If any additional fee is due for the continued prosecution of this application, please charge the same to Applicant's Deposit Account No. 50-2555 (Whitaker, Chalk, Swindle & Sawyer, LLP).

The 35 U.S.C. §112 Rejections:

Claims 1-6 are pending in the application, since Claims 7-10 were withdrawn pursuant to a restriction requirement in the case. The Examiner has initially rejected Applicant's Claims 3 and 4 under 35 U.S.C. §112 as being indefinite in including the tradename designation for the particular preferred coatings used in the practice of the invention. Applicant has canceled Claims 3 and 4 and has incorporated the features of previous Claim 2 into remaining independent Claim 1. These features are the published product specifications for the CHEMGLAZE™ coatings sold commercially by the Lord Chemical Company of Erie, Pennsylvania, and which are described beginning at page 8, lines 11 et seq. of Applicant's Specification as originally filed. Applicant would submit that the Examiner should interpret the amended Claim 1, as far as the scope of the prior art references being applied, as being directed to the use of the Lord CHEMGLAZE™ coating in view of the clear teaching of Applicant's Specification.

The Rejections under 35 U.S.C. §102 and 35 U.S.C. §103(a):

The Examiner has also substantively rejected Applicant's Claims 1, 5 and 6 under 35 U.S.C.§102 in view of Corbett (6,328,309). The Examiner has similarly rejected Applicant's Claims 2-4 under 35 U.S.C. §103(a) based upon the combination of the Corbett '309 reference with Doolittle (3,827,660). Applicant would respectfully submit that the amendments to Claim 1 should remove the §102 rejection, since the amended claim now calls for a specific anti-friction, anti-corrosion

coating, namely the CHEMGLAZE™ polyurethane coating. The earlier Corbett reference taught a Teflon™ coating and nowhere suggested the CHEMGLAZE™ polyurethane type coating.

With respect to the §103 rejection of Claims 2-4, these claims have now been canceled. However, the limitations of former Claim 3 have now been introduced into Claim 1, as amended. There are a number of reasons why Applicant's presently claimed method is not "obvious" even in view of the suggested combination of Corbett and Doolittle.

First of all, Applicant's method is directed to a very specific "niche" manufacturing process, namely the Rieber style belling of PVC pipe. This process is described beginning at page 10, line 1, et seq. of Applicant's Specification:

> *The advantages of the method of the invention can best be understood with reference to a simplified discussion of the prior art Rieber process. Turning first to Figures 3-6, the prior art process is illustrated. Figure 3 shows a section of a conventional elastomeric sealing gasket 11 having a steel reinforcing ring 13 in place on the generally cylindrical outer working surface 15 of the mandrel 17 used in the belling process. The elastomeric gasket 11 can be formed of, for example, natural or synthetic rubber or blends thereof including SBR and is a ring shaped, circumferential member having an inner compression surface 19 and an exposed nose portion 21 which, as shown in Figure 3, abuts a forming collar 23. The forming collar 23 has a first generally cylindrical extent 25 which is joined to a second cylindrical extent 27 by a step region 29, whereby the second extent 27 is of greater external diameter than the first cylindrical extent 25, shown in Figure 3.*
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> *In the first step of the prior art process, the steel reinforced elastomeric ring 11 is thus placed onto the working surface of the mandrel 17 and pushed to a position against the back-up or forming collar 23. In this position, the gasket is firmly*

anchored to the mandrel surface with the rubber between the mandrel and the steel-ring of the gasket being compressed by approximately 20%.

In the second step of the prior art process, the socket end 33 of the thermoplastic pipe 31 is heated and pushed over the steel mandrel 17, gasket 11 and back-up collar 23. The socket end 33 is expanded due to the thermoplastic nature of the pipe. A number of thermoplastic materials, such as polyethylene, polypropylene and polyvinylchloride (PVC) are known in the prior art having the required expansion characteristics, depending upon the end application of the pipe joint. The socket end 33 flows over the first cylindrical extent 25 of the back-up collar 23 and abuts the step region 29 in the second step of the process.

In the next step of the prior art process (Figure 5) the mandrel and pipe move away from the back-up collar 23 and the pipe socket end 33 retracts around the mandrel and gasket 11 due to the elastic forces of the thermoplastic material. Typically, vacuum was also applied through ports 35, 37 which connected the mandrel working surface with a vacuum source (not shown).

In the final step of the prior art process, the pipe socket end 33 is cooled by means of a water spray bar 39 and spray nozzles 41. As the cooling takes place, the pipe socket end 33 shrinks around the gasket 11, thus compressing the rubber body of the gasket between the steel reinforcing ring 13 and the socket-groove to establish a firm seal.

Various features of the above described Rieber style belling process are included in Applicant's amended Claim 1, such as the feature of "forcing the heated socket end of the thermoplastic pipe over the working surface of the mandrel and over the gasket with the retention member being in the extended position, whereby the heated socket end of the thermoplastic pipe flows over the gasket

to form a retention groove for retaining the gasket and again contacts the working surface of the mandrel."

As thus claimed, the method of the present invention must meet two requirements to accomplish its intended purpose: (1) work acceptably in the Rieber style manufacturing process, as described; and (2) meet the appropriate ASTM standard for a sealing gasket, in this case ASTM C361 Reinforced Concrete Low-Head Pressure Pipe. The C361 industry standard covers circular reinforced concrete pipe intended to be used for the construction of pressure pipelines with low internal hydrostatic heads generally not exceeding 125 feet. These type pipelines would be acceptable for use, for example, as sewer lines in municipal applications. Applicant is attaching a laboratory test report certifying the gaskets in question as meeting the ASTM C361 standard.

The Corbett reference is the only reference located by the Examiner that deals with the first requirement above, namely that the coating be used on a gasket being installed in a Rieber process and that the coating not interfere with or impede the Rieber style manufacturing process. However, the Corbett reference deals with a Teflon™ style coating, and not with a polyurethane type coating as presently claimed. There is no reason suggested by the Corbett reference that a completely different class of coating, namely the polyurethane coatings, would be acceptable for the purposes set forth in Claim 1.

One problem which can occur in the Rieber manufacturing process is that frictional resistance between the gasket and mandrel or pipe can hamper the forming operation. Also, in field installations of pipe joints, particularly those involving larger diameter pipe, the insertion force needed to install the male spigot end within the mating socket end could, on some occasions, cause the gasket to be distorted or displaced. Thus, an acceptable coating for purposes of the present invention must not only meet ASTM C361, but also possess the proper frictional resistance properties for the application at hand.

The second requirement for the gaskets under consideration results from the general environment in which these pipe systems are used. Pipelines of the type under consideration are often used as municipal water and sewer lines. The gaskets which are used as the sealing elements in such systems are subjected to attack by any of a number of environmental contaminants. These include, oil and hydrocarbons, sunlight, ozone, chemicals, etc. It would therefore be advantageous to provide a gasket coating which not only improved the frictional resistance characteristics of the gasket, but also helped to provide improved chemical resistance, environmental resistance and abrasion resistance. If the right coating could be found, a sealing gasket could be utilized in these type piping systems which was itself formed of a less expensive grade of rubber, since the coating would provide a protective outer layer for the inner gasket material. Ideally, the coating would provide a gasket with greater oil, chemical and environmental resistance than nitrile rubber at a fraction of the cost. One final advantage of such a coating is that it would provide the option of color coding gaskets by type or application. Thus, a water line gasket would be a different color than a sewer line gasket, etc.

Applicant's invention is the discovery that a particular class of coatings provides many of the above advantages without adding a undue cost burden on the gasket/pipe manufacturing process. Applicant has found that a class of polyurethane synthetic coatings can be utilized in coating applications of the type under consideration. The particularly preferred class of polyurethane materials is sold commercially by Lord Chemical Products of Erie, PA, as the CHEMGLAZE® polyurethane coating described in Applicant's Specification.

Applicant respectfully traverses the Examiner's contention that the claimed invention is "obvious" over the '309 Corbett reference in view of Doolittle. The Doolittle patent deals with a totally different field of use than Applicant's sewer and water line gaskets for plastic pipe. Doolittle deals with an aircraft arresting apparatus which can be stretched across a runway to arrest the forward momentum of a landing aircraft. Applicant would respectfully submit, that while a certain type coating might work in the field of use of Doolittle, it might be totally unsuitable for a totally different field of use, such as sewer gaskets. Doolittle is concerned with the frictional characteristic of a landing net catching an aircraft without damaging sensitive parts of the aircraft (Col. 4, lines 20-23).

Applicant is concerned with the frictional forces in a pipe belling operation where a hot plastic pipe end is being forced over a forming mandrel on which is mounted a sealing gasket. The environments are totally different and the pressures, temperatures, stresses, etc., are totally different.

Secondly, the environmental factors other than resistance affecting Doolittle also differ from those affecting Applicant's goods. Doolittle's nets may be used temporarily (such as in an emergency landing) and then stored away. In such case, there may be very little detrimental effects in the immediate environment. Even if they are continuously left in place, they are mostly subjected to sunlight as a "corrosive" factor. Applicant's sewer gaskets, for example, may subject the sealing gasket to any number of corrosive and detrimental environmental agents. These include, for example, hydrogen sulfide gas in sewer environments. Applicant's gaskets also come into contact with oils and solvents, both during the manufacturing operation and later during field make-up of the pipe joint.

The Obviousness-Type Double Patenting Rejections:

The Examiner has also rejected Applicant's Claims 1-6 under the judicially created doctrine of obviousness-type double patenting based upon co-pending application serial number 10/715,091. Claims 1-6 are also rejected under the same doctrine based upon U.S. Patent No. 6,328,309 in view of Doolittle. Finally, Claims 1-6 are similarly rejected based upon U.S. Patent No. 6, 676,886 in view of Corbett '309 and Doolittle. Applicant is filing the appropriate Terminal Disclaimers to moot the double patenting grounds of rejection.

Reconsideration of remaining Claims 1, 5 and 6 is requested in view of the above amendments are arguments.

Respectfully submitted,

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TECHNICAL DEPARTMENT

Laboratory

ANALYSIS REPORT

RUBBER COMPOUND HT527 Green
DESCRIPTION Rubber Compound Sheets covered with a Lord coating.
TEST METHOD Samples of rubber were exposed / immersed in type ASTM oil during 70 hours at 100°C following test method ASTM D471; as per specification ASTM C361.
DATE December 12, 2005

PROPERTY	UNIT	METHOD	SPECIFICATION ASTM C361	RESULT
Oil Immersion (ASTM IRM 903), 70h at 100°C		D471		
Volume Change	%		80 max	29.6
Weight Change	%			23.9

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